

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF PENNSYLVANIA**

JOAN C. MILLER	:	CIVIL ACTION
	:	
v.	:	
	:	NO. 14-5444
GRAY MANUFACTURING COMPANY, INC.	:	
	:	

MEMORANDUM

KEARNEY, J.

August 20, 2015

As the gatekeeper on expert testimony, we evaluate admissibility of a product design or warning defect expert opinion through the prism of our adversarial process. Our Court of Appeals repeatedly directs us to liberally evaluate an expert's qualifications, reliability and fit. Applying these guidelines to a human factors expert opinion of a design and warning defect in a hydraulic floor jack elevating a UPS truck before it fatally fell on the truck's mechanic, we are skeptical of a design defect opinion when the proffered "human factors" expert has no prior experience with hydraulic jacks let alone the particular jack and is not an engineer but relies upon a staff engineer's analysis of the particular jack and then cites human factors analysis from publications. We are less concerned with a defective warning opinion from a human factors expert based on his study of possible inconsistency in multiple warning and alternative warnings used by competitors. On balance, and given the liberal standard for qualifications and reliability for expert testimony in this product liability, negligence, and breach of warranty action against Defendant Gray Manufacturing Company, Inc. ("Gray"), the manufacturer of the hydraulic floor service jack elevating the UPS van at the time of the accident, we deny Gray's motion to preclude the expert testimony of Stephen B. Wilcox, Ph.D. ("*Daubert* motion") leaving the questionable aspects of his conclusions subject to fulsome cross-examination.

I. Factual Background

UPS employed Mark W. Miller as a mechanic. At some unknown time on January 25, 2012, a UPS walk-in van elevated by Gray's hydraulic floor jack fatally crushed Mr. Miller while he worked underneath it.¹ His executrix Joan Miller sues Gray for negligent design of the floor jack and the propriety of warnings; strict liability for design defect and in the warnings; and, for breach of the warranties of fitness for particular purpose.

Gray moves to preclude the testimony of the Plaintiff's proffered expert Stephen B. Wilcox, Ph.D. ("Dr. Wilcox"), a human factors expert on: 1) any alleged design defect in the floor jack because he lacks the requisite qualifications; and 2) on the defective warnings because the opinion lacks a demonstrable methodology or basis for reliability.

II. Dr. Wilcox's Report and Background²

Dr. Wilcox reviewed documents, including among others, notes of one of his staff engineers from a site inspection, transcripts of depositions and publications to prepare his expert report ("Wilcox report").³ Dr. Wilcox holds a Ph.D. in experimental psychology with over thirty years of experience in the field of human factors⁴ and is currently the principal of Design Science.⁵

¹ There are no eye witnesses to the accident. The parties agree UPS found Mr. Miller trapped under the back left rear of the van presumably attempting to operate the jack's release valve to lower it.

² Dr. Wilcox did not appear at the hearing scheduled by this Court on the *Daubert* motion and Plaintiff's counsel agreed to rely upon the submissions.

³ Dr. Wilcox's report is attached to Gray's *Daubert* motion as Exhibit "K" at ECF Doc. No. 31-15.

⁴ Dr. Wilcox explains the field of "human factors" as:

"the application of knowledge about human beings to the design and evaluation of the things that human beings use. The field includes the study of human

Dr. Wilcox relies upon notes from an April 14, 2015 inspection by one of his company's employees, Peter Sneeringer, who has a background in mechanical engineering and human factors. *See* N.T. Wilcox at 5 (ECF Doc. No. 31-6). Although Dr. Wilcox reviewed Sneeringer's notes regarding his review of the subject jack and a reconstruction of the van's configuration when it fell, Dr. Wilcox could not recall whether Sneeringer tested the jack or how the jack performed mechanically. *Id.* at 6. Dr. Wilcox also relied on his recollection of testimony from Gray representatives indicating to him jack handle extensions are available on some Gray jacks but not for this particular jack. *Id.* at 11. With this foundation, Dr. Wilcox began by identifying the hazards presented by working underneath a vehicle suspended only by the floor jack. Dr. Wilcox identifies the "central question," from a human factors assessment, "is whether or not the jack made it as unlikely as was feasibly possible for a worker to be under a vehicle while it was support by the floor jack." *See* Wilcox report at 4. Dr. Wilcox addresses this question by examining two general categories: "the accident prevention hierarchy" and the warnings on the floor jack.

capabilities, limitations, and tendencies. Human factors professionals study, among other things, how people perceive and respond to the circumstances that they face and what they tend to do in what situations and the implications of this type of information for the design and evaluation of procedures and systems, including warnings and instructions."

See Wilcox report at 2.

⁵ Plaintiff explains Design Science is "a consulting firm that specializes in tailoring products to the needs of the users." *See* Plaintiff's response brief at 5, ECF Doc. No. 36. Dr. Wilcox's resume is attached to Gray's *Daubert* motion as Exhibit "J" at ECF Doc. No. 31-14 ("Wilcox resume").

A. Accident Prevention Hierarchy

Dr. Wilcox detailed an accident prevention hierarchy⁶ citing an article on “hazard control through designer education” to base his opinion the floor jack is defective and the hazard could have been feasibly addressed. Dr. Wilcox finds Gray could address the hazard by engineering solutions based on the behavior of floor jack users. Based on this premise, Dr. Wilcox opined:

It follows that the Gray floor jack in question was defective if the hazard could have been feasibly addressed. Possible ways of doing so were to provide raising and lowering controls that would not fit under a vehicle, or at least to provide a handle extension so that the floor jack to [sic] could be operated from outside the perimeter of the various vehicles it might be used with.

See Wilcox report at 4.

Dr. Wilcox never provides a basis for his finding of “possible ways” to feasibly address the potential hazard. Dr. Wilcox then concluded “given that Gray did not address the hazard via engineering solutions, the only way left to prevent accidents akin to Mr. Miller’s was to rely on the behavior of user of the floor jack to maintain safety.” *See* Wilcox report at p. 4. The question then, according to Dr. Wilcox, “is whether or not the information that Gray provided was adequate to make it as likely as possible that users would never be under a vehicle while it was supported by the floor jack.” *Id.*

B. The Warnings

Dr. Wilcox’s report then addressed the adequacy of Gray’s warnings. Dr. Wilcox opined the Gray warning label on the jack and a warning in the “Quick Reference Guide” in the manual

⁶ Dr. Wilcox’s report explains the principle of accident-prevent hierarchy “is that hazards should be designed out to the extent possible, guarded against only when they cannot be designed out, and addressed with behavior-based methods (e.g., warnings, instructions, training) only when they cannot be addressed in one of the first two ways.” Dr. Wilcox’s report asserts “the principle of the accident-prevention hierarchy has been widely accepted within the engineering community for several decades.” *See* Wilcox report at 4.

are contradictory; the label on the jack stated “after raising the vehicle, **never allow** any part of your body to pass under it” (emphasis added), while the “Quick Reference Guide” as part of the same product label as the warning providing, “... keep your body from under the vehicle **as much as possible**” (emphasis added). Dr. Wilcox opines that warnings, to be effective, “have to be properly designed and properly located.” *Id.* at 5. Dr. Wilcox identifies an adequate warning as one that: “(1) comes to the attention of the intended recipient, (2) describes the nature of the hazard, and (3) clearly expresses what to do to avoid it.” *Id.*

Analyzing these three factors, Dr. Wilcox opined Gray’s floor jack warnings were inadequate because: (1) the warnings were not adequately conspicuous to come to the attention of the user; (2) the warnings failed to describe the nature of the hazard to alert users to the constant hidden hazard of jack failure; and (3) the warnings failed to clearly express what is needed to be done to remain safe even if users understood the hazard (“warnings opinions”). Dr. Wilcox analyzed other warnings provided by competitive floor jack manufacturers directing the user to not allow any part of the body to be under a vehicle while supported by a jack. *See* Wilcox report at 6-7. Based on his review of other warnings provided by competitive jack manufacturers, as well as citing an article on “cognitive aspects of hazard warning labels,” Dr. Wilcox opined that an alternative warning created solely by him would clarify, or possibly amplify, the first part of Gray’s warning to “never place any part of your body underneath a raised vehicle or while raising or lowering a vehicle.” Accordingly, Dr. Wilcox opines Gray’s warning is inadequate and defective.

Dr. Wilcox ultimately concluded the Gray floor jack used at the time of Mr. Miller’s accident (1) “was defective to the extent that there were feasible accident preventions methods that they chose not to implement” and (2) “regardless of the defects of the design, the floor jack

was defective in that it contained defective warnings” and were inadequate. *Id.* at 9-10. Dr. Wilcox further concluded these defects resulted in Mr. Miller becoming trapped under the van causing his death, Mr. Miller did nothing out of the ordinary, and the defects in the warnings and instructions, and “potentially the product,” were “ultimately caused by the failure of Gray to meet the most basic safety standards of safety, which failure showed a wanton disregard for the safety of its customers and users.” *Id.* at 10.

III. Analysis

Gray moves to preclude Dr. Wilcox’s testimony on a design defect in the floor jack based on the lack of qualifications of a human factors expert who is not an engineer and to preclude testimony concerning inadequate warnings for lack of methodology. We find Gray’s present arguments are more properly directed towards a fulsome cross-examination.

Federal Rule of Evidence 702 governs the admissibility of expert testimony and provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, the Supreme Court held Rule 702 imposes a “gatekeeping” obligation on the trial courts to “ensure that any and all scientific testimony . . . is not only relevant, but reliable.” 509 U.S. 579, 589 (1993); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 147 (1999). Our Court of Appeals has long held Rule 702 “embodies a trilogy of restrictions on expert testimony: qualification, reliability and fit.” *Schneider ex rel.*

Estate of Schneider v. Fried, 320 F.3d 396, 404 (3d Cir. 2003) (citing *In re Paoli Railroad Yard PCB Litigation*, 35 F.3d 717, 741-43 (3d Cir. 1994) (*Paoli II*) (footnote omitted); *see also*, *Pineda v. Ford Motor Co.*, 520 F.3d 237, 244 (3d Cir. 2008); *Calhoun v. Yamaha Motor Corp., USA*, 350 F.3d 316, 320 (3d Cir. 2003); *Elcock v. Kmart Corp.*, 233 F.3d 734, 741 (3d Cir. 2000). Our Court of Appeals instructs “the Rules of Evidence embody a strong preference for admitting any evidence that may assist the trier of fact” under Rule 401 generally, and Rule 702 “has a liberal policy of admissibility.” *Pineda*, 520 F.3d at 243 (quoting *Kannankeril v. Terminix Int’l, Inc.*, 128 F.3d 802, 806 (3d Cir.1997) (footnote omitted)).

A. Dr. Wilcox is qualified to opine on the floor jack design defects.

In its motion, Gray challenges Dr. Wilcox’s design defect opinion on one basis: he is not qualified to provide such an opinion. The qualification prong of Rule 702 requires “that the witness possess specialized expertise.” *Pineda*, 520 F.3d at 244 (citing *Schneider*, 320 F.3d at 404). Our Court of Appeals interprets the “qualification requirement liberally,” and those with “a broad range of knowledge, skills, and training qualify” as an expert. *Id.* (citing *Paoli II*, 35 F.3d at 741). The standard for qualifying an expert under Rule 702, as articulated by our Court of Appeals, requires:

[t]he witness to have “specialized knowledge” regarding the area of testimony. The basis of this specialized knowledge “can be practical experience as well as academic training and credentials.” We have interpreted the specialized knowledge requirement liberally, and have stated that this policy of liberal admissibility of expert testimony “extends to the substantive as well as the formal qualification of experts.” However, “at a minimum, a proffered expert witness ... must possess skill or knowledge greater than the average layman”

Elcock, 233 F.3d at 741 (citing *Waldorf v. Shuta*, 142 F.3d 601, 625 (3d Cir. 1998)).

Gray asserts Dr. Wilcox is not qualified to opine on design defect, arguing he is not an engineer, does not have any education or experience relating to product design, and his

experience is limited to the human factors aspect of “design.” Gray takes issue with Dr. Wilcox’s report finding, based on the principle of the accident-prevention hierarchy, the Gray floor jack defective because Gray could have addressed the hazard by designing the jack so that it would not fit under a vehicle or providing a handle extension so that the jack could be operated outside the perimeter of the vehicle.

Plaintiff argues, under the liberal standard for the qualification requirement, Dr. Wilcox’s education and experience in the field of human factors makes him qualified to opine on the development of a safe product with adequate warnings, and the fact that he is not an engineer “is of no moment.” Essentially, Plaintiff argues our inquiry is not whether Dr. Wilcox is the “best qualified” expert or his specialty is not the most appropriate. Rather, Dr. Wilcox is qualified through a “broad range of knowledge, skills and training.” *Pineda*, 520 F.3d at 244-45 (quoting *Paoli II*, 35 F.3d at 741).

Dr. Wilcox is a psychologist with over thirty years of experience in the area of human factors. Dr. Wilcox provides special training and testimony in the area of human factors, including testimony as a human factors expert on issues such as human capabilities and limitations, warnings and instructions, design defects and design procedures, and has conducted human factors investigation in over 400 accidents. *See* Wilcox resume. However, Dr. Wilcox does not specifically identify any experience with floor jacks. There is no evidence he ever worked with a floor jack let alone had any role in the design or engineering of these tools. Dr. Wilcox opines his qualifications are based on his careful examination of facts surrounding the “fire in light of basic facts and principals of human factors.”⁷ Wilcox report at 3. He has been on the design team for many products and systems, but never reports any background in floor

⁷ This “fire” reference is presumably a typographical error. We are not aware of any fire in this case.

jacks. He relies, as he may, on the notes of his staff member who has a “background” in mechanical engineering who inspected the jack. He also relies, as he may, upon his recollection of Gray’s depositions suggesting other jacks may have handle extensions.

We are mindful an expert’s specialized knowledge requirements are interpreted liberally as to the formal qualifications of the expert and the standard is based on possessing skill or knowledge greater than the average layman. We are additionally mindful in the exercise of our discretion we should not exclude an expert’s testimony based on the qualification prong “simply because [we] [do] not deem the proposed expert to be the best qualified or because the proposed expert does not have the specialization that [we] conside[r] most appropriate.” *Pineda*, 520 F.3d at 244 (quoting *Holbrook v. Lykes Bros. S.S. Co.*, 80 F.3d 777, 782 (3d Cir. 1996)). We note two decisions qualifying Dr. Wilcox as a human factors expert, at least in part, in machine defect cases. In *Hamilton v. Emerson Electric Company*, the court found Dr. Wilcox qualified to opine on the design of a miter saw after he participated in the design of various power wood working equipment and orbital sanders. *Hamilton*, 133 F.Supp. 2d 360, 368 (M.D. Pa. 2001). In *Fedor v. Freightliner, Inc.*, the court found Dr. Wilcox qualified as to some issues when there was evidence he had been involved specifically in the design of steps and access to egress systems. *Fedor*, 193 F.Supp. 2d 820, 827-828 (E.D. Pa. 2002). Viewing his academic training together with his practical experience, the court in *Fedor* found Dr. Wilcox “has substantially more knowledge than the average lay person regarding [human factors/ergonomics].” *Id.* (quoting *Waldorf*, 142 F.3d at 627).

Here, while we are skeptical of Dr. Wilcox’s qualifications to testify as to design defect based on his human factors expertise, particularly as he has no stated experience in the design or use of floor jacks, we find under a liberal standard, Dr. Wilcox is qualified, based on his

experience in the field of human factors in developing a design of other products and equipment, to opine as the human factors analysis applied to the design of Gray's floor jack. Though we find Dr. Wilcox's qualifications are marginal, we deny the Defendant's motion based solely on qualifications subject to fulsome cross-examination, given any testimony about the tendency of humans operating machinery is within his expertise.⁸

B. Dr. Wilcox may opine as to defective warnings.

Gray moves to preclude Dr. Wilcox's testimony and opinion, comprising a majority of his testimony, finding Gray's floor jack warnings inadequate. Gray moves to preclude Dr. Wilcox's warnings opinions for two reasons: (1) the warnings opinions lack an adequate basis in fact, are speculative and will not assist the jury; and (2) the warnings opinions are inherently unreliable. We consider Gray's arguments as objections to the "reliability" prong of *Daubert*.

Gray argues Dr. Wilcox's proposed warning is one he personally designed, not used by other manufacturers or tested in accordance with procedures Dr. Wilcox testified to, and lack a discernable methodology in evaluating the defect in the product due to inadequate warnings. Gray does not challenge Dr. Wilcox's qualifications to provide his opinion given his experience in warnings in the human factors study.

In support of its argument that Dr. Wilcox's warnings opinions lack an adequate basis in fact, Gray points to Dr. Wilcox's deposition testimony. Specifically, Gray argues Dr. Wilcox's

⁸ At oral argument, Gray also argued Dr. Wilcox's design defect opinion does not meet the "fit" standard for expert testimony because the facts are contrary to his assumptions and findings. Plaintiff disagrees on the facts. We continue to leave those factual challenges to the jury. Although Gray does not presently challenge the methodology leading to Dr. Wilcox's design defect opinion, we notify counsel Dr. Wilcox's opinion may warrant further analysis as to a discernable methodology. In the accompanying Order, we allow the parties to decide whether they wish to brief this issue and hold an evidentiary hearing after this notice and before jury selection. *See ZF Meritor LLC v. Eaton Corp.*, 696 F.3d 254 (3d Cir. 2012) (citing *Paoli I*, 916 F.2d 829, 854 (3d Cir. 1990)).

deposition reveals he had only “cursory knowledge” of the facts surrounding the accident and of UPS’s training and inspection procedures, his “incorrect belief” regarding the placement of the floor stands and conflicting evidence regarding the placement, and his assumption, rather than evidence, that Mr. Miller read the warning label on the floor jack. Gray argues Dr. Wilcox’s opinions are contrary to the actual facts or based on unfounded assumptions rendering the warnings opinions speculative. Gray further argues the warnings would not have made a difference in this case due to Miller’s conduct, and the conduct of other UPS employees.

Dr. Wilcox’s report evaluates two of Gray’s warnings which, at least facially, can be read as being inconsistent. First, a warning label on a floor jack provided “after a raising a vehicle, never allow any part of your body to pass under it....” Also on the same on-product label as a warning, Gray included a Quick Reference Guide providing “...keep your body from under the vehicle as much as possible.” Dr. Wilcox further opines the hazard is not fully described as being anything other than “serious injury” and not addressing the possibility that the jack might fail. Further, Dr. Wilcox opined the warnings may be directly contradicted by the message repeated twice in the on-product Quick Reference Guide providing that keeping one’s body from under the vehicle “as much as possible” may allow the user to believe he can put himself at risk. Dr. Wilcox compares the owner’s manuals from competitive floor jacks and finds they are more direct without any confusion or ambiguity with words such as “as much as possible.” Dr. Wilcox’s analysis concludes with his own warning he prepared but did not test based on warnings provided by competitive floor jack companies.

Rule 702’s reliability requirement is “the expert must testify to ‘scientific, technical or other specialized knowledge [that] will assist the trier of fact.’” *Paoli II*, 35 F.3d at 742 (citing Fed.R.Evid. 702). This means “that the expert’s opinion must be based on the ‘methods and

procedures of science’ rather than on ‘subjective belief or unsupported speculation’; the expert must have ‘good grounds’ for his or her belief.” *Id.* (quoting *Daubert*, 509 U.S. at 590). In *Paoli II*, our Court of Appeals directed we take into account factors when conducting our inquiry into the reliability of proposed expert testimony including: “(1) whether a method consists of a testable hypothesis; (2) whether the method has been subjected to peer review; (3) the known or potential rate of error; (4) the existence and maintenance of standards controlling the technique's operation; (5) whether the method is generally accepted; (6) the relationship of the technique to methods which have been established to be reliable; (7) the qualifications of the expert witness testifying based on the methodology; and (8) the non-judicial uses to which the method has been put.” *Paoli II*, 35 F.3d at 742 n. 8; *see also Oddi v. Ford Motor Co.*, 234 F.3d 136, 145 (3d Cir. 2000).

In determining whether there are “good grounds” for an expert’s opinion, and considering the factors of *Paoli II*, we “have considerable leeway in deciding in a particular case how to go about determining whether the particular expert testimony is reliable. That is to say, a trial court should consider the specific factors identified in *Daubert* where they are reasonable measures of the reliability of expert testimony.” *Dalton v. McCourt Elec. LLC*, No. 12-3568, 2015 WL 4086668, *4 (E.D. Pa. July 7, 2015) (quoting *Kumho*, 526 U.S. at 152)). The party asserting the admissibility of an expert’s proffered testimony has the burden to demonstrate, by a preponderance of the evidence, that the opinions are based on “good grounds.” *Kannankeril*, 128 F.3d at 807 (citing *Paoli II*, 35 F.3d at 744).

Our major concern is ensuring opinion evidence is connected to existing data and not just based on the *ipse dixit* of Dr. Wilcox. In considering the admissibility of expert opinion, “nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit

opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.” *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

Gray argues UPS mechanics never read the warning and UPS never directed its mechanics to read the warning or any of the product warning labels. Thus, any belief Mr. Miller would have read the product’s warning is speculative. Gray argues Dr. Wilcox’s opinions accordingly lack a basis in fact. We disagree, as there is no way of knowing absent a jury’s finding on UPS’ witness credibility, the effect of the warnings, if any. We are not saying Gray will not be able to present evidence but Dr. Wilcox may testify concerning the adequacy of the warnings and be challenged on cross-examination.

We find Dr. Wilcox’s warnings opinion is not inherently unreliable. He bases his proposed warning on language from two competing floor jack manufacturers. His alternatives are not speculative. *See Curry v. Royal Oak Enterprises, LLC*, No. 11-5527, 2013 WL 3196390, *4 (E.D.Pa. June 25, 2013). While he does not identify testing of the effectiveness of his alternative warning, we are not aware of how he would do so in this context and Gray does not provide a comparison point. Defendants are entitled to challenge these warning opinions in the adversarial process.